AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method for manufacturing a frangible slug for firing from an industrial ballistic tool, the method comprising:

providing a mixture of powders having a composition that consists essentially of:

up to 35 percent ferrotungsten in particulate form,

up to 3 percent lubricant, and

the balance iron in particulate form and inevitable impurities;

compacting said mixture to form a compact; and

sintering said compact to form the frangible slug**,**

wherein said frangible slug is effective to impart kinetic energy to deform a target.

2. (Original) The method of claim 1, wherein said compacting is performed at a pressure of between about 138 MPa (20,000 psi) and about 827 MPa (120,000 psi).

3. (Original) The method of claim 1, wherein said sintering is performed at a temperature no greater than about 900°C.

4. (Currently Amended) The method of claim 1 wherein said mixture is provided having ~~[[from]]~~ an amount **of ferrotungsten in powder form and an amount of iron in powder form** ~~effective to increase~~ **such that** the density of the slug **produced by the compacting and sintering** ~~[[to]]~~ **is about** 30 percent ferrotungsten ~~and wherein said ferrotungsten is in powder form and said iron is in powder form~~.

5. (Original) The method of claim 4 wherein said ferrotungsten in powder form has a particle size distribution such that at least about 40% of such ferrotungsten (by weight)

can pass through a 100 mesh sieve having a characteristic opening of 0.15 mm and said iron in powder form has a particle size distribution such that at least 80% of said iron (by weight) can pass through said sieve.

6. (Original) The method of claim 5 wherein substantially all of said iron can pass through a second 60 mesh sieve having a characteristic opening of 0.25 mm.

7. (Original) The method of claim 1 wherein said iron in particulate form has a particle size distribution such that at least about 85% (by weight) of said iron can pass through a sieve having a characteristic opening of 0.15 mm.

8. (Original) The method of claim 1 wherein said iron has a particle size distribution such that from about 20 to 25% of said iron can pass through a sieve having a characteristic opening of 0.045 mm.

9. (Original) The method of claim 1 wherein said compacting is performed at pressure effective to form said compact with a transverse rupture strength in excess of 5.5 MPa (800 psi).

10. (Original) The method of claim 1 wherein said compacting is performed at pressure effective to form said compact with a transverse rupture strength in excess of 7.24 MPa (1050 psi).

11. (Original) The method of claim 1 wherein said sintering is performed for a sintering time of from about 1 minute to about 2 hours at a sintering temperature of from about 500°C to 900°C to form the slug.

12. (Currently Amended) The method of claim 1 wherein said compacting and sintering are effective to provide the slug with sufficient frangibility such that when the slug is expelled from **the tool** ~~[[theol]]~~ at a muzzle velocity of 640-700 m/s (2100-2400 fps) and normally impacted with a non-armor steel plate having a yield strength of about 310

MPa (45,000 psi) at a distance of about 16 m (53 ft.) from the muzzle, on average a largest residual piece of the slug represents less than 70% of the slug mass and at least 25% of the slug mass is represented by pieces which pass through a 0.084 cm (0.033 inch) sieve.

13. (Original) The method of claim 1, further comprising:

disposing a sleeve on the slug, said sleeve being formed from a material effective to engage with rifling of the tool and having an inner diameter effective to integrally bond said sleeve to the slug so as to impart spin to the slug when fired from the tool.

14. (Original) The method of claim 1, wherein the slug is essentially lubricant-free.

15. (Original) The method of claim 1 wherein the slug is dimensioned to be expelled from an eight-gage tool.

16. (Currently Amended) A method for manufacturing a frangible slug for firing from an industrial ballistic tool, comprising the steps of:

providing a mixture having a composition that consists essentially of:

metallic powder, and

lubricant;

compacting said mixture thereby forming a compact; and

sintering said compact at a temperature no greater than 900°C **to form the frangible slug,**

wherein said frangible slug is effective to impart kinetic energy to deform a target.

17. (Original) The method of claim 16 wherein said metallic powder has an overall iron content of at least 65 percent.

18. (Original) The method of claim 16 wherein said metallic powder consists essentially of:

up to 35 percent ferrotungsten in particulate form; and

the balance iron in particulate form and inevitable impurities, and wherein said compacting is performed at pressure effective to form said compact with a transverse rupture strength in excess of 5.5 MPa (800 psi).

19. (Original) The method of claim 16 wherein said compacting and sintering are effective to provide the slug with sufficient frangibility such that when the slug is expelled from the tool at a muzzle velocity of 640-700 m/s (2100-2400 fps) and normally impacted with a non-armor steel plate having a yield strength of about 310 MPa (45,000 psi) at a distance of about 16 m (53 ft.) from the muzzle, on average a largest residual piece of the slug represents less than 70% of the slug mass and at least 25% of the slug mass is represented by pieces which pass through a 0.084 cm (0.033 inch) sieve.

20. (Original) The method of claim 16 wherein said metallic powder is oxide-reduced iron.

21. (Original) The method of claim 16, wherein said compacting is performed at a pressure of between about 138 MPa (20,000 psi) and about 827 MPa (120,000 psi).

22. (Original) The method of claim 16, further comprising:

disposing a sleeve on the slug, said sleeve being formed from a material effective to engage with rifling of the tool and having an inner diameter effective to integrally bond the sleeve to the slug so as to impart spin to the slug when fired from the tool.

23. (New) A method for manufacturing a frangible slug for firing from an industrial ballistic tool, the method comprising compacting a mixture of powders to form a compact, the mixture of powders having a composition consisting essentially of up to 35 percent ferrotungsten in particulate form, up to 3 percent lubricant, and the balance iron

in particulate form and inevitable impurities, and sintering the compact to form the frangible slug such that the frangible slug is effective to impart kinetic energy to deform a target.